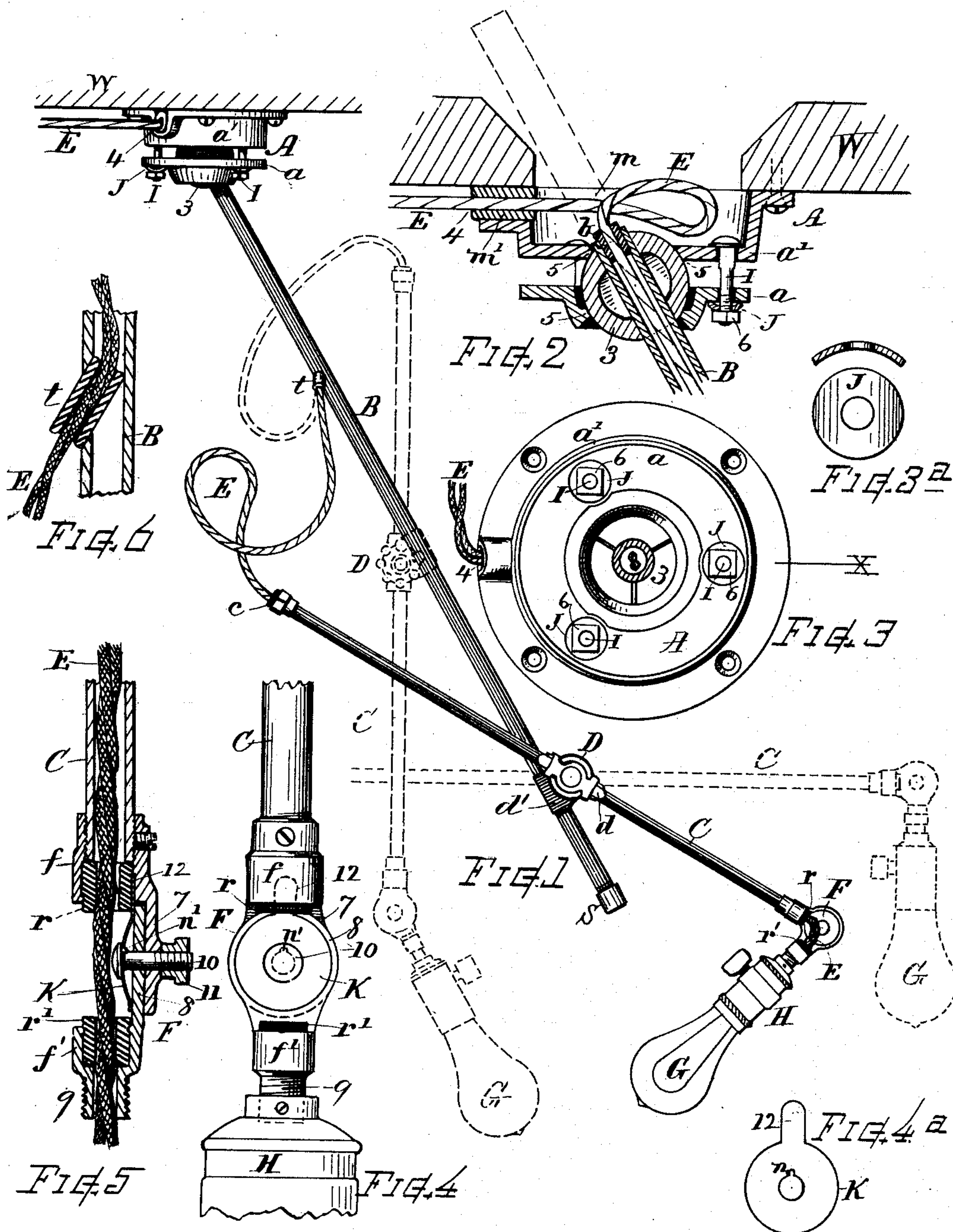


O. C. WHITE.

ADJUSTABLE SUPPORTER FOR ELECTRIC OR OTHER LAMPS.

No. 505,585.

Patented Sept. 26, 1893.



Witnesses.

A. B. Norton
Simon E. King

Inventor.

Otis C. White
By Chas. H. Burleigh
Attorney

(No Model.)

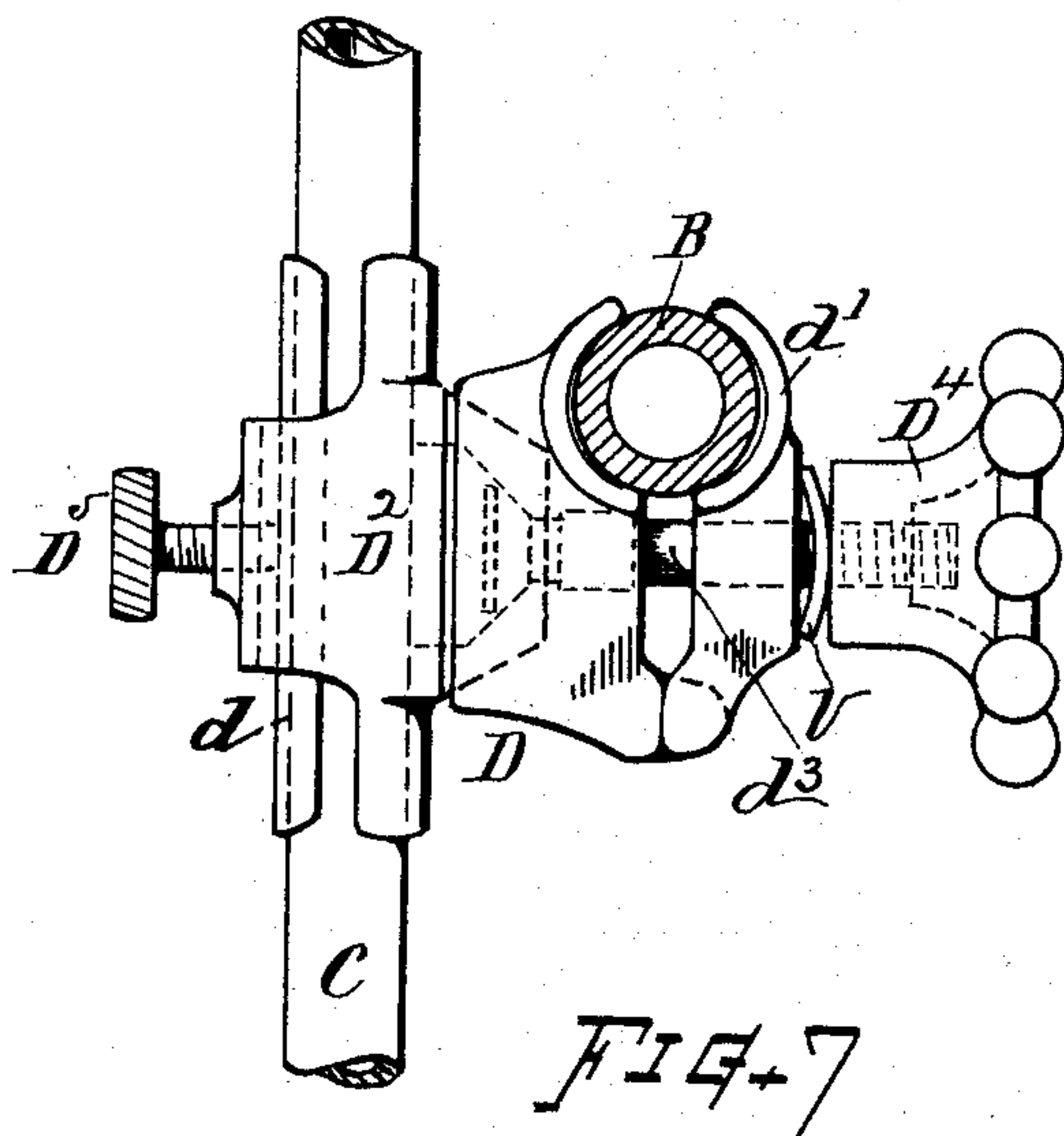
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ADJUSTABLE SUPPORTER FOR ELECTRIC OR OTHER LAMPS.

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Patented Sept. 26, 1893.



Witnesses.

W. B. Barton
Simon E. King

Inventor.

Otis C. White
By Chas. H. Burleigh
Attorney

UNITED STATES PATENT OFFICE.

OTIS C. WHITE, OF WORCESTER, MASSACHUSETTS, ASSIGNOR OF ONE-HALF
TO GEORGE E. FRANCIS, OF SAME PLACE.

ADJUSTABLE SUPPORTER FOR ELECTRIC OR OTHER LAMPS.

SPECIFICATION forming part of Letters Patent No. 505,585, dated September 26, 1893.

Application filed March 31, 1893. Serial No. 468,441. (No model.)

To all whom it may concern:

Be it known that I, OTIS C. WHITE, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented a new and useful Adjustable Supporter for Electric or other Lights, of which the following, together with the accompanying drawings, is a specification sufficiently full, clear, and exact to enable persons skilled in the art to which this invention appertains to make and use the same.

The objects of my present invention are to provide a more practically efficient lamp-supporter, capable of extensive range and variety of adjustment; to render the same convenient, easy and smooth of action, self-maintaining at position of adjustment without requiring manipulation of fastening devices, and adapted for protecting the conductors or circuit wires. Also, to provide attaching and adjusting joints of the improved construction hereinafter specified for sustaining the rods or tubes, supporting the lamp in manner illustrated, and affording the various adjustments hereinafter explained.

The particular subject-matter claimed is hereinafter definitely specified.

In the drawings, Figure 1 is a side view of a lamp support embodying the several features of my invention. Fig. 2 is a vertical section through the attaching and supporting joint at the position of line X on Fig. 3. Fig. 3 is a bottom view of the same. Fig. 3^a shows a plan and section of the bent washer for the pressure adjusting bolts of said joint. Fig. 4 is a front view of the wrist-joint for the lamp-carrier, the conductors being omitted. Fig. 4^a is a separate view of the spring-plate for said joint. Fig. 5 is a longitudinal central section through the wrist-joint with the conductors shown therein, and Fig. 6 is a section of the tube and bushing showing the side issuance of the conductor. Fig. 7 is a side view of a compound swiveling and clamping joint suitable for connecting the main rod or tube with the lamp-carrier rod or tube.

Referring to parts, A denotes the attaching joint by which the apparatus is fixed to the ceiling, wall or other part of a room, or to any suitable and convenient support according to

the requirements and conditions presented by the particular situation where used.

B indicates the main rod or tube adjustably sustained by said attaching joint; C the lamp-carrier rod or tube; D a compound swiveling joint connecting the tubes B and C, and adjustable to any position thereon; E the electric wire or conductors; F the wrist-joint for connecting the lamp-socket H with the carrier-tube C, and G the burner or incandescent lamp to be held at such position as may be required for use. These several parts are, according to my present invention, constructed and combined for operating in the peculiar manner which will now be more fully set forth in detail.

The attaching joint A, the special construction of which is a feature of my invention, is composed of two metal plates *a* and *a'*, one of which is provided with a seating flange with screw-holes for attaching it to the support, while the other is attached to the first by a series of bolts I disposed in triangular relation; the ball 3 that holds the tube or arm B being confined between the two plates *a* and *a'*. The flanged plate is best formed with an internal chamber *m* and provided with a side opening 4 through which the conductors E pass thereinto. The ball 3 is preferably formed in sections. The two plates *a* and *a'* are each formed with an open center and present an annular bearing surface or contact-ring at 5, that embraces the ball on a circle of its exterior about half way between its equator and poles, respectively above and below as indicated in Fig. 2, and between which said ball is confined. One of said parts is provided with a flange. The bolt-holes through the plates *a* *a'* are sufficiently large to allow limited lateral motion or swinging of the bolts I. The necks of the bolts and holes in one plate are square so that said bolts cannot rotate therein. Bent steel washers J (see Fig. 3^a) are arranged on the bolts between the head or nut 6 and the exterior of the plate, thus affording a slightly yielding but steady pressure for drawing the upper and lower plates *a* *a'* toward each other and forcing the narrow ring bearings 5 against the ball. The tube or rod B passes through the ball and is retained by the sec-

tions thereof pressing its surface. Longitudinal adjustment of the tube B through the attaching joint is attained by having an opening in the ceiling or wall W for accommodating the same. (See dotted lines Fig. 2.)

In the operation of the joint A the annular bearings 5 hold the ball securely and concentrically, while the triangular arrangement of the bolts I renders the plate self-adjusting to give uniformity of pressure at all sides, and the yielding of the bolts and bent washers allows the parts to accommodate themselves to any slight inequalities of surface or spherical contour of the ball, so that the arm will swing in any direction with a smooth and easy action, without cramping, giving-away or jerkiness in its movement; and will be self-sustained at any position of adjustment.

The wrist-joint F, the particular construction of which is another feature of my invention, is composed of two circular disks 7 and 8, each provided at its side with a tubular hub, as f and f' , to one of which is attached the carrier-tube C, while the other is suitably threaded at 9 for receiving the lamp socket H or connecting fitting secured thereon, as shown. The hinging disks are offset or disposed at one side of the axis of their hubs f and f' . Said disks are pivotally joined by a clamping screw 10 furnished with a thumb-nut 11 at the outer side thereof. A thin steel spring-plate K is arranged between the pivot-head and disk for forcing the hinging-disks together with yielding pressure and friction that will permit easy flexure of the joint so that the lamp can be turned to any position desired without loosening the clamp-screw, and be self-sustained at positions of adjustment.

The spring-disk K is formed with a projecting tang 12 on one edge, and a nick n at one side of its center opening, (see Fig. 4^a) while the pivot-stud is fitted with a corresponding lug n' under its head. When the parts are assembled the tang extends into the opening of the hub f and the lug n' engages the nick n , thus insuring the devices against the screw becoming loosened or tightened by the flexure of the joint.

Bushings of insulating material r r' are best provided in the hubs f f' through which the conductors pass, the short portion that bends with the joint being exposed but not interfered with by the hinging pivot (see Fig. 5.)

The joint D that connects the main tube and carrier-tube is a compound swiveling, sliding and clamping joint that affords longitudinal and rotative adjustment of the tube C in all directions relatively to the tube or rod B. Such joint consists of a swiveling head D^2 having an adjustable grip d for retaining the part C, and suitable clamping jaws d' that embrace the part B. The swiveling head D^2 is fitted to rotate on a suitable seat on the main part of the joint and is axially

retained by a pivot or screw d^3 that passes through the parts, as indicated by dotted lines Fig. 7; said pivot having a circular head disposed in a cavity within the swiveling-head. The pivot is non-rotatable in the main part of the joint, and a nut or binder D^4 is fitted on its opposite end outside the clamp-jaw d' , substantially as indicated, so that by tightening said nut the several parts are clamped together with sufficient friction for retaining the carrier-tube C at the desired angular position relatively to the main tube B. A yielding washer v is preferably arranged between the nut and jaw to render the action more efficient and satisfactory than would rigid clamping of the parts. A set-screw D^5 affords means for adjusting the pressure of grip d on the rod C. The particular construction of a joint adapted for this connection forms the subject-matter of separate application for Letters Patent, Serial No. 464,636, and is therein fully described in detail.

To prevent the joint D from passing off the end of the tube B a stop or screw cap s is fixed thereon, as shown.

The conductor E passes into the tube B above or through the joint A and is brought out through an insulating bushing set in the side, as at t ; it then leads into the end of tube C and through the same to the wrist-joint and thence into the lamp-socket attachment as illustrated. The wire or conductor is thus protected so that adjustments of the carrier can be made to bring the lamp into any desired position of support among moving parts of machinery without liability of the conductor becoming entangled therewith. The ends of the tubes and parts against which the conductors might wear, are fitted with bushings of insulating material, as at m' , b , t , c , r and r' .

In the operation of my improved mechanism, the rod or tube B has lateral swing or adjustment in all directions; also endwise adjustment through the joint A. The tube or carrier C has longitudinal and rotative adjustment within the joint D, swiveling or revolving about the axis of the joint, (see dotted lines Fig. 1) rotation of the joint about the axis of the main tube, and adjustment of the joint D with the tube C longitudinally along the tube B, while the wrist joint permits the lamp to be turned to either side; thus affording capacity for holding a light in any position within the range of the supporter.

If in any instance it is desired to support a gas burner in place of an incandescent lamp, then a flexible pipe or tubular conductor can be substituted in place of the covered wire conductor herein shown, for supplying gas to such burner.

In some instances, in lieu of attaching the main tube B directly to the wall or ceiling by the joint A, it may be attached by said joint to one end of a standard or tube, the other end of such standard or second tube being attached to the wall or ceiling by a similar joint

A, thus giving greater extension where required.

As a variety of differently constructed lamp supporters composed of rods or tubes combined with adjustable joints have heretofore been patented it will be understood that I do not broadly claim such means irrespective of the particular construction defined.

I claim—

1. In an adjustable supporter for lights, the combination of the main rod or tube having one of its ends adjustably attached to a support, the lamp-carrier rod or tube having means for attaching the lamp thereto, and the compound swiveling, sliding and clamping joint connecting said tubes one to the other in the manner set forth, whereby longitudinal and rotative adjustment on both tubes, and swiveling adjustment of the carrier-tube are effected as described.

2. In an adjustable supporter for lamps, the attaching-joint composed of the two open-centered plates, one provided with a seating-flange, an interior chamber and an opening through the side thereof; the triangular-disposed connecting-bolts passing loosely through said plates joining one with the other, and the open-centered ball supported by annular bearing surfaces between the plates; in combination with the main tube having its end confined within said ball, the conductor entering said chamber through the side opening and passing into said tube through its upper end, insulating bushings in the side openings and tube end, the carrier tube, the swiveling connecting joint therefor longitudinally adjustable upon and joining said tubes one with the other, the lamp-attaching wrist-joint and lamp, substantially as set forth.

3. In an adjustable supporter for lamps, the combination of the main-rod or tube, the attaching-joint, consisting of the two open-centered plates one provided with a seating-flange, the open-centered ball embraced by annular bearing surfaces within the plates, and having the end of said tube adjustably confined therein, the connecting bolts disposed at triangular positions through said plate and having the bent washers thereon, the carrier tube, the swiveling connecting-joint joining said tubes one with the other, and longitudinally adjustable upon each tube, the offsetting wrist-joint attached to the end of said carrier-tube, the electric lamp socket secured to the outer end of said joint, and the conductor or wires extending through said carrier-tube and wrist-joint, all substantially as set forth.

4. The herein described attaching-joint A

comprising, in combination, the centrally chambered plate a' having a peripheral-base or flange for attachment to the ceiling or support, the annular counter-plate a adjustably connected therewith, said plates respectively provided, internally, with the opposite annular bearing surfaces 5, the hollow spherical ball 3 confined between said annular bearing surfaces, the rod or tube B supported by said ball, the loosely fitting bolts I connecting said plates one with the other, and the bent steel washers J arranged on said bolts between the head or nut and the plate, all substantially as set forth.

5. The wrist-joint composed of the centrally-pivoted frictionally-matched disks, each provided at one edge with a tubular threaded hub axially offset from the plane of the disk, a cupped spring-plate fitted to bear against the inner disk and having a nick at one side of its center opening, and a projecting tang that enters one of said hubs, the pivoting screw having under its head a lug that engages the nick in said spring-plate, and the adjusting nut fitted on the threaded end of said pivot screw at the outer side of said disks, for the purpose set forth.

6. The wrist-joint composed of two centrally pivoted adjacently matched disks, each having at its edge a radially projecting tubular threaded hub, chambered at the inner end and provided with a tubular insulating bushing therein; said hubs disposed with their axes in a common plane, offset from the plane of the disks, as shown; in combination with the carrier-tube fixed in one of said hubs, the lamp-socket attached to the other of said hubs, and the conductors leading through said hubs and bushings, substantially as and for the purpose set forth.

7. In a supporter for electric lamps, the main tube adapted for receiving the conductor at its upper end, having a side opening at an intermediate position in its length for the issuance of the conductor, and an attaching joint in which said tube is adjustably sustained, said attaching-joint having a hollow center through which the conductor passes to said main tube, in combination with the lamp-carrier-tube externally connected with said main tube, and the conductor wires arranged as set forth.

Witness my hand this 27th day of March, A. D. 1893.

OTIS C. WHITE.

Witnesses:

CHAS. H. BURLEIGH,
ELLA P. BLENUS.